DEVELOPING A MEASURE OF LOCAL GOVERNMENT'S FINANCIAL CONDITION[1]

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ABSTRACT

This study develops an instrument to measure the financial condition of local governments (LG) in Indonesia. The instrument will serve as an early warning system for local governments' financial management. The instrument to measure their financial condition consists of six dimensions, namely short-term solvency, long-term solvency, budgetary solvency, service-level solvency, financial flexibility, and financial independence. Each dimension has its own indicators. There are a total of eighteen indicators examined in this study. These indicators are combined to form a composite index, called a Financial Condition Index (FCI). The reliability and validity of the composite index is analyzed and the results show that the measures developed in this study are reliable and valid. In addition, the instrument possesses the criteria of a good measure: it is theoretically sound, a comprehensive assessment, it has predictive ability, distinctive ability, it is practical, objective, and a resistant to manipulation and gaming.

Keywords*: financial condition, local government, short term solvency, long term solvency, budgetary solvency, service-level solvency, financial flexibility, financial independence*

INTRODUCTION

In 1999 Indonesia began a new era of local government autonomy in which the central government decentralized many aspects of its authority over local government (LG). As a result, one aspect of the new local autonomy is fiscal decentralization granting LGs the right to manage revenue, expenditure, and finance (Act 22/1999). However, one result of this fiscal decentralization is that more than thirty percent of the central government budget is now being distributed to LGs through a decentralization fund that has increased sharply, almost five times - from $US9.08 billion in 2001 to $US43.66 billion in 2011, (assuming 1 $US = Rp9,000) (State Budget Acts, 2000 – 2010). However, the central government only provides the principles of managing local finance to LGs rather than the detailed rules it provided previously. In turn, the financial conditions among LGs will vary. For example, there were 124 out of the 491 LGs in Indonesia experiencing financial problems paying their employee's salaries in the fiscal year 2011 (*Harian Surya*, 2 August 2011, p.1). In the Province of Central Java, 11 out of 35 LGs experienced such problems (*Harian Kedaulatan Rakyat*, 16 June 2011, p.1).This variation of financial conditions creates the need for central governments, central and local parliaments, and communities to have an effective instrument to monitor the soundness of the wide range of LGs in managing their finances.

LGs in Indonesia, at each of the provincial, municipal, and district levels, must prepare financial statements consisting of balance sheets, statements of actual performance compared to budget, and statements of cash flows (Act 17/2003, Act 1/2004, Act 32/2004, and Government Regulation 58/2005). These financial statements must be audited by The Supreme Audit

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Board of The Republic of Indonesia in order to assure compliance with the Government Accounting Standards (Act 15/2004). These financial statements inform users about the values of total assets, total debt, net assets, total revenues, total expenditures, and cash inflows and outflows. However, these audited financial statements do not adequately inform users about the LGs financial conditions.

Knowing the financial condition of LGs is important because it is the main provider delivering services directly to the public, including health, education, and roads and bridges services (just to name a few). However, a LG can deliver these services if, and only if, it is in a healthy financial condition. Such a financial condition assures the sustainability of the LG in delivering services of an appropriate quality. In addition, a LG with a healthy financial condition not only directly impacts on the local community, but also plays an important role in the economy. If the LG fails to meet its financial obligations, the regional economy could be adversely affected (Honadle and Lloyd Jones, 1998).

Unlike the business sector in which the financial assessment of firms is clearly defined, research assessing the financial conditions of LGs is relatively new because such research only started in the 1980s (Kloha et al., 2005). This can be contrasted to the business sector where such research commenced 20 years earlier. In the business sector, Beaver (1966) and Altman (1968) established a seminal model to assess the financial condition of a firm. In the LG sector, scholars and practitioners have tried to develop measures for assessing local financial conditions using various dimensions and indicators (Groves et al., 1981, Brown, 1993, Brown, 1996, Hendrick, 2004, Honadle et al., 2003, Kleine et al., 2003, Kloha et al., 2005, Ladd and Yinger, 1989, Nollenberger et al., 2003, Mercer and Gilbert, 1996, Wang et al., 2007, Zafra-Gómez et al., 2009, Kamnikar et al., 2006, Rivenbark et al., 2009, Rivenbark et al., 2010, Rivenbark and Roenigk, 2011, Berne and Schramm, 1986, Casal and Gomez, 2011). However, there is still little agreement about what appropriate dimensions and indicators can be used to measure the

specific financial conditions that can occur in different contexts (Wang et al., 2007, Dennis, 2004).Therefore, the objective of this study is to develop a measure of the financial condition of LGs based on the government's financial reporting framework.

CONCEPT OF THE FINANCIAL CONDITION

1. Definition of the Financial Condition

Many scholars have tried to define LGs' financial conditions during the last few decades. Berne and Scramm (1986) proposed a definition of financial condition as the probability that a government will meet its financial obligations to creditors, consumers, employees, taxpayers, suppliers, constituents, and others as these obligations come due. Groves et al. (1981) and Nollenberger et al. (2003) defined financial conditions as a LG's ability to finance its services on a continuing basis. They distinguished cash solvency, budgetary solvency, long-run solvency and service-level solvency. Cash solvency is the ability of a LG to generate enough cash over 30 or 60 days to pay its bills. Budgetary solvency is a LG's ability to generate sufficient revenue to fund its current or desired service levels. Long-run solvency is a LG's ability to fulfill all of its expenditure activities including regular expenditures as well as those that will appear only in the years in which they must be paid. Furthermore, service-level solvency is a LG's ability to provide services at the level and quality that are required and desired by its people. The definition proposed by Groves et al. (1981) and Nollenberger et al. (2003) above is adopted by Wang et al. (2007). They define the financial condition as the level of financial solvency, which includes the dimensions of cash, budget, long-run, and service-level solvency.

The Canadian Institute of Chartered Accountants (CICA, 1997) defines a government's financial condition as its financial health, which is measured from the aspects of sustainability, vulnerability, and flexibility within the overall context of the economic and financial environment. Sustainability is a condition in which the government is able to maintain the programs that

already exist and meet the requirements of creditors without incurring a debt burden on the economy. Flexibility is a condition in which the government can increase its financial resources to respond to increased commitments, either through increased revenues or by increasing its debt capacity. Vulnerability is a condition in which the government becomes dependent, resulting in vulnerability, to sources of funding beyond its control or influence, both from domestic and international sources. Kamnikar et al. (2006) build a definition of the financial condition based on definitions offered by Nollenberger et al. (2003) and CICA (1997). They define the financial condition as a LG's ability to meet its obligations as they become due, and the ability to continue to provide the services its constituency requires.

Kloha et al. (2005) and Jones and Walker (2007) define the financial condition in the context of fiscal distress. Kloha et al. (2005) defined it as a condition in which LGs cannot meet the standards in operations, debt, and the needs of their societies for several consecutive years, whereas Jones and Walker (2007) interpret fiscal distress as an inability to maintain pre-existing levels of services to the community. On the other hand, Hendrick (2004) defined the financial condition in terms of fiscal health. She defined it as a LGs' ability to meet its financial obligations as well as services to the community. Rivenbark et al.(2009, 2010), Rivenbark and Roenigk (2011) define it as a LG's ability to meet its ongoing financial, service, and capital obligations based on the status of resource flow and stock as interpreted from annual financial statements. Their definition is developed based on two reasons, why financial statements are prepared and on the objectives of financial reporting. Berne and Scramm (1986) state that the reasons to prepare financial statements are to report on the flow of resources during a given time period (i.e. shown in operating statements) and to report on the stock of resources at a given point in time (i.e. shown in balance sheets), whereas the financial reporting objective is to provide information necessary to determine whether an organization's financial position

improved or deteriorated as a result of the resource flow(GASB, 1987).

From the various definitions that have been developed by previous researchers and institutions, the most widely accepted definition of LG financial condition is the ability of a LG to fulfill its financial obligations in a timely manner and the ability to maintain the services provided to the community. Unfortunately, the researchers mentioned above do not develop a definition of financial condition stemming from the objectives of a nation. It is argued that the definition of the financial condition of LGs should be derived from the objectives of a nation.

2. Conceptualizing the Definition of the Financial Condition of LGs

This current study argues that in defining local government financial condition it should be derived from the national objectives, because the financial condition of local governments is a financial effect resulting from local governments' activities to achieve the national objectives. In the context of Indonesia, there are four national objectives as stated in the preamble to the Constitution: to protect all the people of Indonesia and the entire country of Indonesia; to promote the welfare of the people; to intellectualise the life of the people; and to establish a world order based on freedom, eternal peace and social justice (Constitution, 1945).

To achieve those objectives, they must be implemented together by the central government and local governments. To achieve the national objectives, local governments implement programs and activities to serve the community in all areas of public services including health, infrastructure, education and so-forth. In the framework of local government autonomy, as stated in Act 32/2004 regarding regional autonomy, each local government is granted the right to design its own policies to achieve the national objectives as long as they are in congruence with the central government's strategic plan. As a result, each local government has its own programs and activities based on its people's perceptions, both economic and political. The implementation of programs and activities is

financed by the local government budget. Because each local government has different programs and activities, this will impact on its financial condition. The central government only provides local government with the principles for managing local finance rather than the detailed rules it provided previously (Act 32/2004; Act 33/2004; Government Regulation 58/2005). As a result, the financial condition of each local government varies. Therefore it can be concluded that the financial condition of local government is a financial effect resulting from local government activities to achieve the national objectives.

During the process of implementing its own programs and activities, local government interacts with its stakeholders and environments. The interaction among local government, stakeholders and environments will create certain rights and obligations for the local government. These obligations to the community can be ordinary obligations, such as the fulfillment of minimum service standards in the areas of health, education and infrastructure, or extraordinary obligations that are caused by extraordinary events such as natural disasters, riots and other matters. Article 21 of Act32/2004 details the rights of local government to organize and manage their own affairs and administration; select regional leaders; manage local officials; manage the wealth of the region; raise taxes and levies; obtain the results from the management of natural resources and other resources that are in the area; find sources of legitimate income, and other rights stipulated by legislation. In addition, article 22 of Act 32/2004 describes the obligations of local government to its stakeholders. The obligations are to protect the people, maintain unity and national harmony, as well as the integrity of the Unitary Republic of Indonesia; improve the quality of life of society; develop democracy; provide justice and equity; improve basic educational services; provide health care facilities; provide appropriate social and public facilities; develop a system of social security; prepare spatial planning; develop productive resources in the area; preserve the environment; manage the administration of

residence; preserve social and cultural values; establish and implement regulations according to its authority; and other obligations set out in the legislation.

However, local government efforts to achieve the national objectives are constrained by resource availability, including human, financial, equipment, time resources and so on. Therefore, local government has to optimize limited resources to achieve the national objectives. Local government must ensure that its obligations to stakeholders are satisfied. In addition, local government must be able to execute its rights effectively and efficiently. Thus, a good local government is a local government that can meet all of its obligations and can execute its rights efficiently and effectively in order to achieve national objectives.

Bringing the argument above into the financial context, the sound financial condition of a local government occurs when a local government is able to execute its financial rights (i.e. collecting revenue) efficiently and effectively and is able to meet all its financial obligations to its stakeholders in order to achieve the national objectives. The ability to execute financial rights efficiently and effectively is shown by an increase in a local government's own revenues. In turn, this condition will lead to an increase in the financial independence of local governments.

The ability to meet financial obligations is shown by the capability of a local government to repay its short-term and long-term liabilities (i.e. short-term solvency and long-term solvency), the ability to cover its operating expenses (i.e. budgetary solvency) and the capacity to supply services of the standard and quality needed and requested by its people (i.e. service-level solvency). In addition, a sound financial condition of local government occurs when a local government is able to anticipate events that are unexpected in the impending future (i.e. financial flexibility), such as natural disasters or social disasters. The following figure shows the process of conceptualization of the definition of local government financial condition.
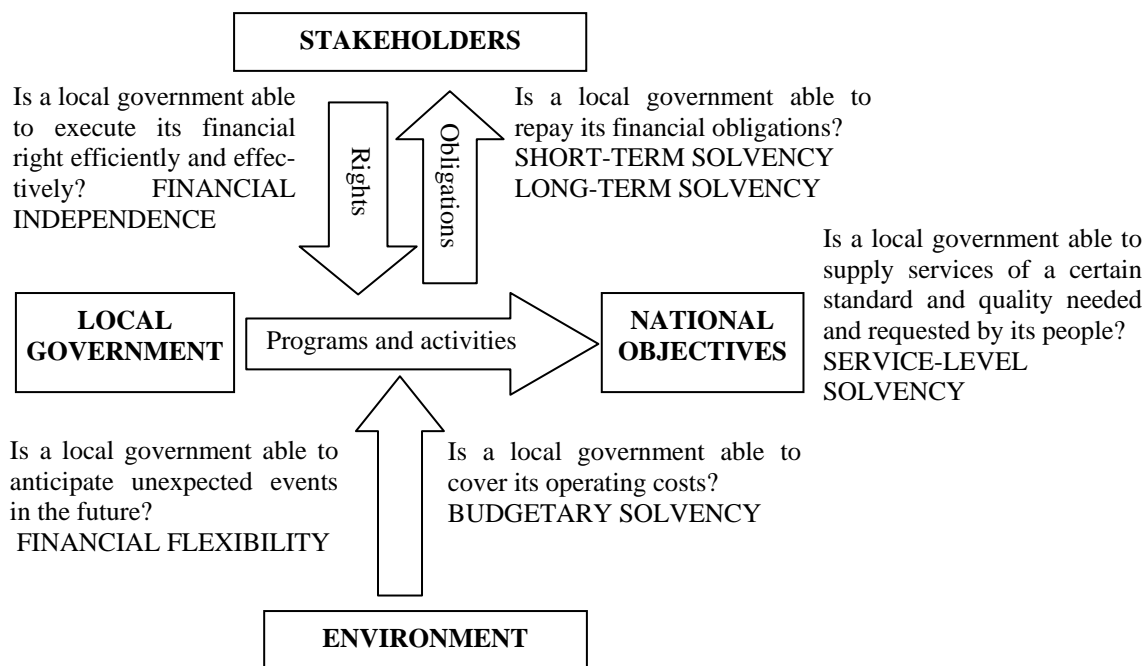
Figure 1. Conceptualizing the definition of financial condition of local government

Based on the argument stated above, there are six dimensions forming the financial condition of local governments. The dimensions are:

1. the capability to fulfil short-term obligations, hereafter called *short-term solvency*

2. the capability to fulfil operational obligations, hereafter called *budgetary solvency*

3. the capability to fulfil long-term obligations, hereafter called *long-term solvency*

4. the capability to overcome unexpected events in the future, hereafter called *financial flexibility*

5. the capability to execute financial rights in an effective and efficient manner, hereafter called *financial independence*

6. the capability to supply services to the community, hereafter called *service-level solvency*.

Thus, this study defines the financial condition of a local government as its financial ability to fulfill its obligations (short-term obligations, long-term obligations, operational obligations and obligations to provide services to the public), to anticipate unexpected events and to execute financial rights efficiently and effectively. As shown in the previous paragraphs, the step of

conceptualization of the definition of the financial condition is used as guidance in determining the elements or dimensions of the local government financial condition. This important step was not taken in previous studies (see Brown, 1993, 1996; Casal & Gomez, 2011; Chaney et al.,2002; Dennis, 2004; Kamnikar et al., 2006; Kloha et al., 2005a; Mercer & Gilber, 1996; Wang et al.,2005; Zafra-Gomez et al., 2009a).

3. Dimensions and Indicators of the Financial Condition of Local Government

Based on the definition of financial condition conceptualized in section 2.2, which refers to the financial capability of a local government to fulfill its financial obligations (short-term obligations, long-term obligations, operational obligations and obligations to provide services to the public), to anticipate unexpected events and to execute financial rights efficiently and effectively, it can be concluded that there are six dimensions forming the local government financial condition: short-term solvency, long-term solvency, budgetary solvency, financial independence, financial flexibility and service-level solvency. Compared to Wang et al.'s (2007) and CICA's (1997) definitions, which have four dimensions and three dimensions respectively,

the dimensions and indicators used in this thesis are more comprehensive in capturing the aspects of the financial condition of local government.

Ratios are used to measure each dimension because ratios can eliminate the effect of the size of the objects measured (Jones & Walker, 2007). The more indicators used to measure a dimension, the better the result will be, because they can measure the dimension comprehensively. The ratios developed in this study are based on financial statements prepared by local governments in Indonesia. These financial statements are prepared based on the Government Accounting Standards (Government Regulation No. 24/2005; 71/2010), which must be followed by local governments in Indonesia. The six dimensions and their operational definitions are as follows.

a. Short-term solvency

Short-term solvency demonstrates the ability of the local government to fulfill its obligations that mature within 30 to 60 days (Nollenberger et al., 2003). However, this study uses the duration of 12 months rather than 30 to 60 days because the disclosure in balance sheets is for current liabilities, which fall due within 12 months.

The financial information about local government obligations that will mature within 12 months is shown in the current liabilities segment in the statement of financial position, whereas local government resources that are available and are intended to be used within 12 months are depicted in the current assets segment of the balance sheet. Therefore, to show short-term solvency, the numerator of the ratio is local government current revenues and the denominator is local government current liabilities. The ratios to measure the short term solvency of a local government are as follows.

$$\text{Ratio A} = \frac{(\text{Cash and Cash Equivalent} + \text{Short term Investment})}{\text{Current Liabilities}}$$

$$\text{Ratio B} = \frac{(\text{Cash and Cash Equivalent} + \text{Short term Investment} + \text{Account Receivables})}{\text{Current Liabilities}}$$

$$\text{Ratio C} = \frac{\text{Currents Assets}}{\text{Current Liabilities}}$$

Ratio A is the most conservative ratio in measuring short-term solvency, followed by Ratio B and Ratio C, respectively. In general, the higher the value of these three indicators, the more current assets are available to guarantee the current liabilities. Thus, an increasing value of these indicators indicates an improving quality of short-term solvency. However, values that are too high in these ratios indicate that a local government has excessive current assets (i.e. idle capacity), which could be better used to deliver services to the community. Therefore, excessive current assets lead to the sub-optimal delivery of services to the community.

b. Budgetary solvency

Budgetary solvency demonstrates the ability of local government to generate revenue to cover its operations during the period of the financial budget (Nollenberger et al., 2003). Thus, the indicators of this dimension must show a balance between operating revenues (i.e. as the numerator) and operating expenditures (i.e. as the denominator) during the financial period. The ability is measured by the following ratios.

$$\text{Ratio A} = \frac{(\text{Total Revenues} - \text{Special Allocation Fund Revenue})}{(\text{Total Expenditures} - \text{Capital Expenditure})}$$

$$\text{Ratio B} = \frac{(\text{Total Revenues} - \text{Special Allocation Fund Revenue})}{\text{Operational Expenditure}}$$

$$\text{Ratio C} = \frac{(\text{Total Revenues} - \text{Special Allocation Fund Revenue})}{\text{Employee Expenditure}}$$

$$\text{Ratio D} = \frac{\text{Total Revenues}}{\text{Total Expenditure}}$$

The elimination of the special allocation fund revenue from total revenues is because it is not a regular revenue and is beyond the local government's control. In the first ratio, Ratio A, capital expenditure is deducted from total expenditures because it is not a part of the operating activities of a local government. In the case

of Ratio C, the use of employee expenditure as the denominator is because it is the most important part of the operating expenditures. In general, a higher value for all ratios indicates a better ability by a local government to obtain revenue to cover its operating expenditure.

c. Long-term solvency

Long-term solvency indicates the capacity of a local government to repay its long-term liabilities (CICA, 1997; Nollenberger et al., 2003). The dimension indicates the sustainability of a local government. Long-term obligations can only be met by local governments if they have sufficient assets that are financed from their own resources. To reflect long-term solvency, the appropriate ratios are to place long-term liabilities as the denominator and total assets or investment equities as the numerator. Larger values of the ratio show a greater ability of a local government to meet its long-term liabilities. Conversely, lower ratios indicate a lesser capability of a local government to meet its long-term liabilities.

Another ratio that could be used to measure long-term solvency is the proportion of investment equity scaled to total assets or long-term liabilities. This ratio indicates what portion of a local government's total assets or long-term liabilities is financed or covered by its own resources. Larger values of the ratio denote a better ability by a local government to meet its long-term liabilities. The formulas for these above mentioned ratios are as follows.

$$\text{Ratio A} = \frac{\text{Long Term Liabilities}}{\text{Total Assets}}$$

$$\text{Ratio B} = \frac{\text{Long Term Liabilities}}{\text{Investment Equities}}$$

$$\text{Ratio C} = \frac{\text{Investment Equities}}{\text{Total Assets}}$$

d. Service-level solvency

Service-level solvency is the capability of local governments to supply and maintain the quality of public services needed and desired by the community (Wang et al., 2007).To meet that definition, the denominator in this dimension should be the number of people served by the local government. The numerator of this ratio is a number that reflects the facilities owned by local governments used to provide services to the people. Total assets indicate the accumulation and availability of resources owned by local governments in serving the community for the future (Chaney et al., 2002). Total equities are also appropriate as the numerator because they are the net assets, which are the difference between total assets and total liabilities, which are owned by a local government to serve its community. This can be thought of as assets not claimed by creditors. These assets are the net resources available to provide services in the future (Chase & Philips, 2004). Thus, the value of total assets or total equities is a suitable figure to represent the purpose. The higher the ratio of total asset value per population, the better the local government provides public services to its people.

Another ratio to measure service-level solvency is the ratio of total expenditure to population (Wang et al., 2007). This ratio indicates how much cost a local government incurs to serve each resident. The higher the values of this indicator, the more services and goods (either quantity or quality) local government is delivering to the community.

Therefore, growing values of those ratios show increasing quantity and quality of service level-solvency. The formulas for these above mentioned ratios are as follows.

Ratio A = Total Equities : Population

Ratio B = Total Assets : Population

Ratio C = Total Expenditures : Population

e. Financial flexibility

Financial flexibility is a condition in which a local government can increase its financial resources to respond to increased commitments, through either increasing revenues or increasing its debt capacity (CICA, 1997). Thus, based on the definition, the indicators of this dimension must show a balance between revenue capacity and debt capacity during the financial period. The numerator of this dimension should be

represented by revenue capacity after deducting mandatory expenses and/or restricted revenues, whereas the denominator is represented by the amount of obligations to other parties. This ratio should indicate local government's ability to cover its debt burden (Chase & Phillips, 2004). The condition is measured by debt-servicing capacity ratios as follows.

$$\text{Ratio A} = \frac{\begin{array}{c}\text{(Total Revenues} - \text{Special}\\ \text{Allocation Fund Revenue} -\\ \text{Employee Expenditures)}\end{array}}{\begin{array}{c}\text{(Repayments of Loan Principal} +\\ \text{Interest Expenditures)}\end{array}}$$

$$\text{Ratio B} = \frac{\begin{array}{c}\text{(Total Revenues} - \text{Special}\\ \text{Allocation Fund Revenue} -\\ \text{Employee Expenditures)}\end{array}}{\text{Total Liabilities}}$$

$$\text{Ratio C} = \frac{\begin{array}{c}\text{(Total Revenues} - \text{Special}\\ \text{Allocation Fund Revenue} -\\ \text{Employee Expenditures)}\end{array}}{\text{Long Term Liabilities}}$$

$$\text{Ratio D} = \frac{\begin{array}{c}\text{(Total Revenues} - \text{Special}\\ \text{Allocation Fund Revenue)}\end{array}}{\text{Total Liabilities}}$$

Higher values of these four ratios demonstrate a higher level of local government flexibility to face extraordinary events, which could either come from internal sources or be external to the local government organization. Therefore, increasing values of these ratios show an improving quality of financial flexibility.

f. Financial independence

Financial independence is a condition in which a local government is not vulnerable to sources of funding beyond its control or influence, from both national and international sources (CICA, 1997). To fulfill the definition, the numerator of the ratio should be the local government's own revenues and the denominator should be total revenues or total expenditures. As mentioned in Act 32/2004 and Act 33/2004 about fiscal balance between the central and local government, the local government's own revenues consist of local tax revenues, local retribution revenues, dividends from the local

government's investment and other local revenues.

A higher value of these ratios shows the more that local government's own revenues contribute to its total revenues. Thus, the larger the result of the two ratios, the better is the financial independence of the local government. This condition is measured by the following ratios.

$$\text{Ratio A} = \frac{\text{Total Own Revenues}}{\text{Total Revenues}}$$

$$\text{Ratio B} = \frac{\text{Total Own Revenues}}{\text{Total Expenditures}}$$

The lower the value of these ratios the less is the financial independence of a LG. Thus, the higher the value of the two ratios, the higher is the financial independence of the LG.

4. Criteria for Developing a Measure of the Financial Condition of LG

It is argued that to develop a good measure one must set criteria as guidance. Previous researchers fail to develop a good measure of LG financial condition because they did not establish criteria (see Brown, 1993). Only a few studies have set criteria for such measures (see Kloha et al.,2005; Wang et al., 2007). Therefore, to develop a good measure of the financial condition of LG, this study sets criteria or attributes that must be met by the measures as follows.

1. Be theoretically sound, which means that dimensions and indicators developed are derived from theories on the financial condition of LGs (Kloha et al.,2005; Wang et al., 2007)

2. Possess the qualities of measurement validity and reliability (Wang et al., 2007, Cooper and Schindler, 2011). Validity is the extent to which a test measures what it actually wants to measure, whereas reliability is related to the accuracy and precision of a measurement procedure (Cooper & Schindler, 2011).

3. Assess the financial condition of the entire LG rather than only part of it (Wang et al., 2007).

4. Provide predictive ability, which means that information provided by the measure, can be

used to recognize financial distress before it becomes a financial emergency (Klohaet al.,2005)

5. Be practical, as Cooper & Schlinder (2011) explain that practicality is related to various factors of economic, convenience, and interpretability.

6. Use publicly available, uniform, and frequently collected data. As a result, the measure will be objective and resistant to manipulation and gaming (Klohaet al.,2005).

7. Be accessible and parsimonious, which is easily understood by LG officials and the public (Kloha et al.,2005). The criteria are achieved through the creation of a composite index of the financial condition.

METHODS

1. Data and Data Sources

This study uses secondary data which are LG financial statements audited by the Supreme Audit Board of the Republic of Indonesia (BPK RI) for the period of the fiscal years 2007-2010. LG financial statements, which are publicly available, were taken from the BPKRI. In addition, socio-economic data was collected from the Central Bureau of Statistics of the Republic of Indonesia for the period 2007 to 2010.

2. Steps in Developing the Measure of the Financial Condition

The steps to develop the measure of the financial condition are as follows:

Step 1: Reliability Test

Reliability indicates consistency of measurement. Consistency occurs when the measurement is free from measurement error. The reliability of indicators forming a dimension is tested by using the correlation test. This correlation coefficient indicates the intensity and direction of the relationship between two or more variables (Wang et al., 2007). Furthermore, the reliability of the measure of financial condition is analyzed using the Cronbach Alpha coefficient.

Step 2: Build a Composite Index of LG Financial Condition

After developing dimensions and indicators for the financial condition, the next step is to construct a composite index of LG financial conditions. Unlike Wang et al (2007) which used z values to build a composite index, the method of preparation of the composite index in this study adopts the method of developing the Human Development Index (HDI), developed by the United Nations (UNDP, 2011)[1].This is because the unit value of the dimensions and indicators of the financial conditions are different. Another reason is that the method has been acknowledged worldwide.

Step 3: Validity Test

The validity of a measurement indicates whether a test or a model measures something that it is intended to measure. This study uses predictive, concurrent, and convergent validities to assess the validity of the measure.

FINDINGS

1. Data

In order to achieve homogeneity so that comparability is maximized, this study uses financial statements of district and municipal LGs in Java as the sample. LGs in Java are relatively homogenous in environment, socio-economic factors, culture, and infrastructure. The length of the observation period was four fiscal years from 2007 until 2010. This study does not include the fiscal year 2006 because it is the first year of the implementation of the Government Accounting Standards. In that year LGs experienced a year of transition to adopt the new accounting standards. Therefore, the fiscal year of 2007 was chosen as the starting year of our observation as the LGs had become accustomed to the standards.

There are 445 items of data (i.e. financial statements) that could be observed from 2007 until 2010. However, three financial statements are not available, two in 2007 (Kabupaten Kla-

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[1] How this study adopted the UNDP method is explained in section 4.5.

ten and Kota Serang) and one in 2008 (Kota Jogjakarta). Therefore, there are 442 items of data available for analysis. Based on the data availability, ratios for each dimension are calculated. After completing the computation of all the ratios, the next step is to identify outlier data. A case is considered to be an outlier if its standard score[2] is more than three (Hair et al., 2006). The outlier data should not be used in the analysis because it could disturb the picture of objects analyzed (Judd and McClelland, 1989). The number of outlier data is 29 for the dimension of flexibility and 2 for the dimension of service level solvency. As a result, there is a range of 413 data (i.e. dimension of flexibility) to 440 data (i.e. dimension of service level solvency) used in analyzing the reliability of indicators forming the dimensions.

2. Descriptive Statistics

After removing the outlier data[3], the descriptive statistics to summarize and describe the object analyzed are run. The result of the descriptive statistics could be used as a benchmark or general patterns by LGs. The descriptive statistics of the observed data is as follows Table 1.

Table 1 shows that the data for all indicators are not normally distributed as indicated by the values of skewness which are more than 0 for all indicators. Therefore, the median is a better statistic to represent the population (Kamnikar et al. 2006).

Short Term Solvency. The median of Ratios A, B, and C show that LGs have, 34.72, 41.51, and 45.36 times the specified assets to cover their current liabilities. This condition indicates that LGs have considerable idle current assets which should be avoided. LGs should optimize

their current assets in order to deliver services to their communities. Based on the ratios above, it is concluded that LGs have a strong short term solvency.

Long Term Solvency. The median of Ratios A and B are 0.000044 and 0.000048 respectively. It means that every one rupiah of long term debt is guaranteed by 22,727.27 rupiahs of assets (i.e. 1/0.000044) or 20,833.33 rupiahs of investment equities (i.e.1/0.000048). This indicates that LGs have a strong ability to fulfill their long term obligations. Ratio C indicates that most of LGs' assets, 94.38%, are financed by their own resources. Therefore, based on the three ratios, it can be concluded that LG has strong long term solvency.

Budgetary Solvency. The median for indicator A, B, C, and D is 1.15, 1.17, 1.69, and 1.00 respectively. This condition indicates that LGs have large revenues to cover their operational expenditures. Based on these ratios, it is concluded that LGs have good budgetary solvency.

Financial Independence. The median of the two ratios for independence are 8.17% and 8.36 %, respectively. It means that only around 8% of LGs' revenues are under their control. In other words, it can be said that LGs rely on sources of funding beyond their control or influence. Based on these ratios, it is concluded that LGs have weak financial independence.

Financial Flexibility. The median of Ratios A, B, C, and D show that LGs have the capacity of 788.9, 196.5, 77.1, and 1,998.2 times to anticipate extraordinary events which could come from internal or external sources to LG organizations.

Service Level Solvency. The median of Ratios A and B show that LGs have Rp2.089.057 and Rp2.104.560 in assets, respectively, to serve each of its residents. In the case of ratio C, it indicates that LGs incur expenditure of Rp813.278 to serve each of their residents.

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[2] The standard score of a case is computed by using formula: $z = (X – Mean)/Standard Deviation$, where X is the value of a case.

[3] Outliers data prove that regional decentralization causes variations in local government financial conditions as stated in the introduction section although LGs in Java are relatively homogenous in environment, socioeconomic, culture, and infrastructure.

Table 1. Descriptive Statistics of Indicators of Financial Condition

Dimensions	Indicators	N	Mean	Median	Standard Deviation	Maximum	Minimum	Skewness	Standard Error of Skewness
Short Term Solvency	Ratio A	436	1,868,032,846.84100	34.724515	12,687,754,001.8474	134,741,000,000.00	0.13	7.89	0.1169
	Ratio B	436	2,001,559,542.57002	41.517633	13,475,809,519.9921	142,595,000,000.00	0.16	7.81	0.1169
	Ratio C	436	2,200,772,276.61266	45.360556	14,578,971,622.2791	158,419,000,000.00	0.26	7.62	0.1169
Long Term Solvency	Ratio A	430	0.00089	0.000045	0.0022	0.02	0.00	4.18	0.1177
	Ratio B	430	0.00095	0.000048	0.0024	0.02	0.00	4.18	0.1177
	Ratio C	430	0.93700	0.943769	0.0412	1.00	0.65	(2.10)	0.1177
Budgetary Solvency	Ratio A	430	1.16980	1.155093	0.1209	1.64	0.84	0.75	0.1177
	Ratio B	430	1.18955	1.179005	0.1245	1.66	0.84	0.66	0.1177
	Ratio C	430	1.73115	1.693231	0.2747	2.71	1.21	0.77	0.1177
	Ratio D	430	1.00927	1.003508	0.0554	1.26	0.84	0.53	0.1177
Financial Independence	Ratio A	437	0.09316	0.081714	0.0417	0.24	0.00	1.16	0.1168
	Ratio B	437	0.09398	0.083575	0.0424	0.24	0.00	1.15	0.1168
Financial Flexibility	Ratio A	413	59,148,134,192.46220	788.939210	122,445,729,322.4140	560,037,000,000.00	2.85	1.99	0.1201
	Ratio B	413	5,028,410,185.96003	196.520972	47,376,481,797.3506	650,188,000,000.00	3.80	10.23	0.1201
	Ratio C	413	2,190,560,751.20167	77.102020	20,118,904,217.7258	235,450,000,000.00	1.59	9.39	0.1201
	Ratio D	413	120,452,904,022.78700	1,998.210879	173,449,827,439.9560	1,177,960,000,000.00	1.79	1.65	0.1201
Service Level Solvency	Ratio A	440	3,148,747.23106	2,089,057.129000	2,997,138.0705	22,154,984.72	54,865.69	2.65	0.1164
	Ratio B	440	3,160,164.49706	2,104,560.680000	3,000,894.0514	22,155,129.89	90,998.09	2.64	0.1164
	Ratio C	440	988,849.02930	813,278.133450	627,030.2626	7,284,677.00	285,159.56	3.80	0.1164

3. Analyzing the Reliability of Indicators Forming a Dimension

The Pearson's correlation test was used to analyze the reliability of the indicators forming each dimension. Before analyzing the data, assumptions underlying the test were examined. The assumptions are normal data distribution, the linearity relationship between variables, homoscedasticity, and no outliers. After the assumptions were met, the Pearson's correlation test was run.

Short-Term Solvency. All three short term solvency indicators were significantly correlated ($p <0.01$) with high intensity correlation (Pearson Correlation coefficient, r, nearly equal to 1for all pairs). Thus, it can be concluded that the three indicators measure the same construct or dimension of short-term solvency.

Long-Term Solvency. The ratio of Long-Term Liabilities to Total Assets (Ratio A) and the ratio of Long Term Liabilities to Investment Equities (Ratio B) are significantly correlated ($p <0.01$) with high intensity (Pearson Correlation coefficients, r, equal to 1for all pairs). However, the ratio of Investment Equities to Total Assets (Ratio C) is not correlated with the 2 other indicators. This is indicated by p values > 0.05.Thus, it can be concluded that only 2 ratios similarly measure the construct or dimension of long-term solvency, they are the ratio of Long-Term Liabilities to Total Assets and the ratio of Long-Term Liabilities to Investment Equities.

Budgetary Solvency. All 4 budgetary solvency ratios were significantly correlated ($p <0.01$) with moderate intensity correlation (Pearson Correlation coefficient, r, between 43.6% - 96.5%). Therefore, it can be concluded that the 3 ratios measure the same construct or dimension of budgetary solvency.

Financial Independence. The 2 independence indicators were significantly correlated ($p <0.01$) with high intensity (Pearson Correlation coefficient, r, nearly equal to 1for all pairs). Thus, it can be concluded that both ratios measure the same construct or dimension of financial independence.

Financial Flexibility. All 4 flexibility ratios were significantly correlated ($p<0.01$) with varying intensity between pairs (Pearson Correlation coefficient, r, ranging from 25% to 99.7%). Thus, it can be concluded that the 4 ratios measure the same construct or dimension of financial flexibility.

Service Level Solvency. All 3 service level solvency indicators were significantly correlated ($p < 0.01$) with a sufficiently strong intensity correlation between pairs (Pearson Correlation coefficient, r, ranging from 72.1% to 99.8%). Thus, it can be concluded that the 3 ratios measure the same construct or dimension of service level solvency.

4. Analyzing the Reliability of the Measure of Financial Condition

After determining the indicators forming the dimensions of the measure, then the Cronbach Alpha test was used to analyze the reliability (internal consistency) of all indicators as to whether they reliably measure the same underlying construct (the financial condition of LG).

The standardized Cronbach coefficient alpha was used instead of the raw coefficient to analyze the result because there was a mixture of multi-unit variables. For example the unit of measure of the Ratio B of Total Assets to Population is the amount of money per resident, whereas the unit of measure of Ratio C of Current Assets to Current Liabilities is expressed as "times". One consequence of using the standardized Cronbach alpha is the values of the variables were transformed to a standard score before running the test. The following table 2 shows the result of the Cronbach Alpha test.

The Cronbach coefficient Alpha is 0.8430[4]. Based on the coefficient, it can be concluded that all indicators demonstrate good internal consistency (reliability) to measure the same construct (financial condition of LG) because it is more than 0.70. An instrument is reliable if it has a coefficient of Cronbach Alpha equal to or greater than 0.70 (Nunnaly and Bernstein, 1994).

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[4] The raw Cronbach coefficient alpha is 0.8088

Table 2. Outputs of Cronbach Alpha Test

```
****** Method 1 (space saver) will be used for this analysis ******
R E L I A B I L I T Y   A N A L Y S I S   -   S C A L E   (A L P H A)
                                               N of
Statistics for      Mean    Variance   Std Dev  Variables
     SCALE         0.0232   84.5679    9.1961      18
Item-total Statistics
                 Scale       Scale      Corrected
                 Mean       Variance      Item-            Alpha
                if Item     if Item       Total          if Item
                Deleted     Deleted    Correlation       Deleted
ZSERV_A          0.0201     75.2356      0.4807          0.8222
ZSERV_B          0.0200     75.2738      0.4784          0.8223
ZSERV_C          0.0210     77.4486      0.3475          0.8291
ZLONG_A          0.0210     74.7683      0.5087          0.8208
ZLONG_B          0.0210     74.7736      0.5083          0.8208
ZSHOR_A          0.0232     73.8100      0.5679          0.8176
ZSHOR_B          0.0232     73.7757      0.5700          0.8175
ZSHOR_C          0.0232     73.8730      0.5640          0.8178
ZBUDG_A          0.0227     77.3288      0.3542          0.8288
ZBUDG_B          0.0229     78.1885      0.3037          0.8314
ZBUDG_C          0.0223     76.5398      0.4011          0.8264
ZBUDG_D          0.0187     81.0247      0.1419          0.8393
ZINDP_A          0.0222     80.5496      0.1678          0.8381
ZINDP_B          0.0217     80.0263      0.1977          0.8367
ZFLEX_A          0.0223     77.6763      0.3337          0.8298
ZFLEX_B          0.0239     73.2828      0.5999          0.8159
ZFLEX_C          0.0238     72.7032      0.6362          0.8139
ZFLEX_d          0.0210     74.8198      0.5055          0.8209
Reliability Coefficient
N of Cases =    394.0                    N of Items = 18
Alpha =    0.8333
```

The values in the column **Cronbach's Alpha if Item Deleted** show Cronbach Alpha values obtained when the item (variable) on the line is removed. If an item (variable) has a Cronbach alpha value greater than the overall value of the Cronbach Alpha measurement scale, the item (variable) should be deleted or revised for the purposes of analysis. Based on the results of the reliability analysis, all values in the column **Cronbach's Alpha if Item Deleted** are less than or equal to 0.8430 so that no items (variables) need to be removed.

5. Developing the Indicator Index and Dimension Index

To develop the indicator index for each dimension, the first step is to determine which LGs have similar characteristics (cohort) in order to achieve homogeneity among the LGs. There are two groups of LGs, namely district LGs (83 LGs) and municipal LGs (29 LGs). The second step is determining the minimum value and maximum value of each indicator in order to create an index of the indicator. The minimum and maximum values are determined for each year. The index of each indicator is calculated by using the following formula:

$$\frac{\text{Indicator}}{\text{Index}} = \frac{\text{Actual Value} - \text{Minimum Value}}{\text{Maximum Value} - \text{Minimum Value}}$$

A value of 0 indicates a minimum value and a value of 1 indicates the maximum value for the index; 1 meaning a perfect score of financial condition, while 0 means the worst financial condition.

Before calculating the indicator index, several treatments were done as follows.

1. The values of indicators of service level solvency and flexibility were transformed using Logarithm Natural (Ln) to "new values" so that the difference between minimum value and maximum value becomes smaller. This is the same way the United Nation develops the sub dimension index of income in the Human Development Index (UNDP, 2011). In developing such an index, the UN uses Ln to transform the raw value of income.

2. The values of the ratio of Total Expenditure to Population were inversed so that the inversed values had a similar direction with other ratios (i.e. ratio of total assets to population and ratio of total equities to population). As a result, the 3 ratios can be averaged to create a sub-index of service level solvency.

3. The values of indicators of long term solvency were inversed so that the values had similar meaning with other indicators: the higher the value, the better the condition. After inversing the value of the indicators, the values were transformed by using Ln as the treatment for indicators of service level solvency and flexibility.

4. The values of indicators of short-term solvency and budgetary solvency were multiplied by 10, and then the results transformed by using Ln. The reason for multiplying by 10 is because there was a big variety in the value of indicators ranging from less than 1 to more than 1. There is a difference in the behavior of a number less than 1 and more than 1 if one transforms the number by using Ln. If one transforms a number less than 1 using Ln, the result will be negative. On the other hand, if one transforms a number more than 1 using Ln the result will be negative. To avoid this fact, the values of the indicators are multiplied by 10 so that all the values of the indicators are more than 1. Therefore, the behavior of all the values will be similar.

Next is determining the dimension index by using the arithmetic mean[5] for which the formula is as follows:

$$\text{Dimension Index} = (I_{\text{Indicator-1}} + I_{\text{Indicator-2}} + \ldots + I_{\text{Indicator-n}}) : n$$

where n is the number of indicators forming the dimension.

The dimension index is the average of the indicator indexes that compose it. It is assumed that the indicator indexes have equal importance so that it has similar weight.

6. Developing a Composite Financial Condition Index (FCI)

After each dimension is calculated, the final step is to develop a composite index of financial condition. The formula to create the index is as follows:

$$\text{FCI} = w_1 * DI_1 + w_2 * DI_2 + \ldots + w_n * DI_n$$

Where FCI = Financial Condition Index; w = weight of dimension index; DI = dimension index; and n = number of dimension. The composite index and dimension index are the result of the transformation of the variable value into a value between 0 and 1. A value of 0 indicates a minimum value and a value of 1 indicates the maximum value for the index; 1 meaning a perfect score of financial condition.

The results of the best and the worst 10 of the Financial Condition Index[6] for municipal and district LGs from 2007 to 2010 can be seen in the tables 3, 4, 5, and 6 below. For the fiscal year 2010 the highest 3 ranked municipal LGs are Mojokerto, Madiun and Blitar, whereas the lowest 3 are Serang, Cimahi and Bekasi. In the range between fiscal year 2007 to 2010 the municipal LGs which were consistently in the top 10 ranks are Bogor, Kediri, Mojokerto, and Pekalongan. On the other hand, the municipal LGs that remained in the lowest 10 from fiscal year 2007 to 2010 are Yogyakarta, Cimahi, Bekasi, Tasikmalaya, Surakarta, and Malang. The following tables present the top 10 (Table 3) and the bottom 10 (Table 4) of the composite Financial Condition Index (FCI) of municipal LGs in Java from 2007 to 2010.

In the group of district LGs, the best 5 for the fiscal year 2010 are Bekasi, Sampang, Demak, Sidoarjo, and Bogor consecutively, while the LGs of Purwakarta, Sumedang,

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[5] Arithmetic mean is more appropriate than geometric mean because it gives a fairer result than the geometric mean. For example, if a dimension consists of three indicators of which one of the indicators has zero value, so the end result of the geometric mean is zero although the other two ratios have good values. This condition does not happen in the arithmetic mean.

[6] In calculating the Financial Condition Index it is assumed that the weight of each dimension is equal, although the author believes that the weight of each dimension should be different.

Grobogan, Ngawi, and Garut remained in the 5 lowest ranks. Looking at the 4 year trend from 2007 to 2010, the LGs that always stay in the 10 highest ranked positions are Bekasi, Tangerang and Bogor. On the other hand, the LGs of Ngawi, Garut, and Grobogan consistently remained in the bottom 10. The following tables present the highest 10 (Table 5) and the lowest 10 (Table 6) of the composite Financial Condition Index (FCI) for district LGs in Java from 2007 to 2010.

Table 3. The Highest 10 of FCI of Municipal Local Governments in Java From 2007 to 2010

2007	FCI	2008	FCI	2009	FCI	2010	FCI
Kota Bogor	0.69	Kota Mojokerto	0.67	Kota Madiun	0.69	Kota Mojokerto	0.75
Kota Kediri	0.57	Kota Bogor	0.50	Kota Tangerang Selatan	0.65	Kota Madiun	0.59
Kota Banjar	0.56	Kota Salatiga	0.49	Kota Pekalongan	0.62	Kota Blitar	0.57
Kota Pasuruan	0.55	Kota Pekalongan	0.49	Kota Bogor	0.54	Kota Cilegon	0.55
Kota Blitar	0.52	Kota Pasuruan	0.48	Kota Tangerang	0.49	Kota Bandung	0.52
Kota Magelang	0.51	Kota Kediri	0.48	Kota Kediri	0.48	Kota Tangerang Selatan	0.52
Kota Salatiga	0.50	Kota Sukabumi	0.48	Kota Cilegon	0.47	Kota Bogor	0.52
Kota Surabaya	0.49	Kota Batu	0.45	Kota Mojokerto	0.46	Kota Magelang	0.51
Kota Mojokerto	0.49	Kota Madiun	0.45	Kota Bandung	0.45	Kota Kediri	0.50
Kota Pekalongan	0.48	Kota Probolinggo	0.43	Kota Probolinggo	0.43	Kota Pekalongan	0.49

Table 4. The Lowest 10 of FCI of Municipal Local Governments in Java From 2007 to 2010

2007	FCI	2008	FCI	2009	FCI	2010	FCI
Kota Yogyakarta	0.39	Kota Bandung	0.31	Kota Depok	0.32	Kota Pasuruan	0.40
Kota Tegal	0.38	Kota Bekasi	0.31	Kota Yogyakarta	0.32	Kota Yogyakarta	0.38
Kota Cilegon	0.37	Kota Yogyakarta	0.29	Kota Tegal	0.32	Kota Tasikmalaya	0.38
Kota Semarang	0.37	Kota Malang	0.29	Kota Bekasi	0.30	Kota Surakarta	0.33
Kota Cimahi	0.31	Kota Cirebon	0.29	Kota Tasikmalaya	0.29	Kota Malang	0.32
Kota Bekasi	0.31	Kota Semarang	0.29	Kota Cirebon	0.29	Kota Cirebon	0.32
Kota Surakarta	0.30	Kota Tegal	0.28	Kota Cimahi	0.28	Kota Semarang	0.30
Kota Depok	0.28	Kota Surakarta	0.26	Kota Malang	0.26	Kota Bekasi	0.28

Table 5. The Highest 10 of FCI of District Local Governments in Java From 2007 to 2010

2007	FCI	2008	FCI	2009	FCI	2010	FCI
Kabupaten Pati	0.70	Kabupaten Bekasi	0.85	Kabupaten Bekasi	0.84	Kabupaten Bekasi	0.76
Kabupaten Bekasi	0.58	Kabupaten Bangkalan	0.73	Kabupaten Bangkalan	0.68	Kabupaten Sampang	0.71
Kabupaten Gresik	0.58	Kabupaten Pati	0.73	Kabupaten Pati	0.68	Kabupaten Demak	0.70
Kabupaten Tangerang	0.57	Kabupaten Bandung Barat	0.62	Kabupaten Tangerang	0.61	Kabupaten Sidoarjo	0.60
Kabupaten Jepara	0.57	Kabupaten Gresik	0.60	Kabupaten Sidoarjo	0.60	Kabupaten Bogor	0.58
Kabupaten Serang	0.56	Kabupaten Serang	0.60	Kabupaten Bogor	0.58	Kabupaten Jepara	0.52
Kabupaten Bogor	0.56	Kabupaten Bogor	0.59	Kabupaten Serang	0.57	Kabupaten Tangerang	0.50
Kabupaten Bandung	0.55	Kabupaten Tangerang	0.58	Kabupaten Gresik	0.55	Kabupaten Banjarnegara	0.50
Kabupaten Banjarnegara	0.52	Kabupaten Jepara	0.57	Kabupaten Sukabumi	0.53	Kabupaten Jombang	0.50
Kabupaten Sampang	0.52	Kabupaten Sampang	0.56	Kabupaten Banjarnegara	0.52	Kabupaten Bangkalan	0.49

Table 6. The Lowest 10 of FCI of District Local Governments in Java From 2007 to 2010

2007	FCI	2008	FCI	2009	FCI	2010	FCI
Kabupaten Jember	0.34	Kabupaten Ponorogo	0.36	Kabupaten Bojonegoro	0.33	Kabupaten Semarang	0.29
Kabupaten Sukoharjo	0.34	Kabupaten Ngawi	0.35	Kabupaten Kulon Progo	0.32	Kabupaten Tasikmalaya	0.29
Kabupaten Cianjur	0.33	Kabupaten Ciamis	0.35	Kabupaten Mojokerto	0.32	Kabupaten Pekalongan	0.28
Kabupaten Brebes	0.31	Kabupaten Garut	0.35	Kabupaten Garut	0.31	Kabupaten Kediri	0.28
Kabupaten Kuningan	0.30	Kabupaten Kuningan	0.34	Kabupaten Ponorogo	0.31	Kabupaten Pemalang	0.28
Kabupaten Grobogan	0.30	Kabupaten Purwakarta	0.34	Kabupaten Ciamis	0.30	Kabupaten Purwakarta	0.28
Kabupaten Ciamis	0.30	Kabupaten Karanganyar	0.33	Kabupaten Grobogan	0.29	Kabupaten Sumedang	0.26
Kabupaten Garut	0.29	Kabupaten Cianjur	0.33	Kabupaten Wonogiri	0.29	Kabupaten Grobogan	0.26
Kabupaten Ngawi	0.27	Kabupaten Pandeglang	0.32	Kabupaten Blora	0.29	Kabupaten Ngawi	0.25
Kabupaten Pandeglang	0.19	Kabupaten Grobogan	0.32	Kabupaten Ngawi	0.27	Kabupaten Garut	0.21

7. Analyzing the Validity of the Measure

This study utilizes predictive, convergent, and concurrent validity to assess the validity of the measure.

7.1. Analyzing the Predictive Validity

In the predictive validity approach, a measure is considered valid if the measure has a relationship with the factors that are believed to associate with it. It is believed that the financial condition of LGs is associated with socio-economic factors (Wang, Dennis, &Tu, 2007; Zafra-Gomez, 2009). Socio-economic factors include population, population per capita, gross domestic product (GDP), either GDP at current price or GDP at constant price, and GDP per capita. The socio-economic data were collected from the Central Bureau of Statistics of the Republic of Indonesia ranging from 2007 to 2010.

The analysis of predictive validity was examined by looking at the correlations between the financial condition indexes of district LGs and the socio-economic factors. There were 329 observations available from 2007 to 2010. The results of the examination are as follows Table 7.

Based on Table 7, all socio-economic factors are significantly correlated with the financial condition of the LG because the p-values are less than 0.05. All of the associations are positive, meaning that the higher the value of the socio-economic factors and the financial distress the higher is the FCI. The strongest association is the relationship between GDP at constant price and financial condition which has a coefficient correlation of 43.5%, whereas the weakest association is between GDP per capita and financial condition which has a coefficient correlation of 17.1%. Based on these findings, it is concluded that the measure of financial condition developed in this study meets the attribute of predictive validity.

7.2. Analyzing the Convergent Validity

In the convergent validity approach, a measure is considered valid if the measure is interrelated with the factors that are theoretically supposed to be interrelated with it. It is argued that the financial condition of LGs is interrelated with the level of their financial distress, which is the better the financial condition the less is the financial distress of the LG. To measure level of financial distress, the study uses a ratio as follows:

Table 7. Correlation between Financial Condition of LG and Socioeconomic Factors

Socioeconomic Factors	Number of Observations	Pearson Coefficient of Correlation	Significance (2-Tailed)
Population	329	0.264	0.000
Population Density	329	0.319	0.000
GDP at Current Price	329	0.369	0.000
GDP at Constant Price (2000)	329	0.435	0.000
GDP per Capita	329	0.171	0.002

$$\text{Financial Distress} = \frac{(\text{Revenues} - \text{Operating Expenditures})}{\text{Revenues}}$$

The higher the ratio means the less is the financial distress of the LG. The bigger the difference between revenues and operating expenditures means that a LG has more money to fund its non-mandatory activities. This condition shows that the LG experiences less financial distress. On the other hand, a LG experiences a higher level of financial distress if it has a smaller difference between revenues and operating expenditures.

The analysis of predictive validity was examined by looking at the correlations between the financial condition indexes of district LGs and their degree of financial distress. There were 329 observations available from 2007 to 2010. The results of the examination show that there was a significant correlation (i.e. p-value of 0.000 which is less than 0.005) between the financial condition and degree of financial distress. The association is positive 0.329, meaning that the higher score of FCI (i.e. the better financial condition) the higher is the ratio of financial distress (i.e. the less financial distress). Based on these findings, it is concluded that the measure of financial condition developed in this study meets the attribute of convergent validity.

7.3. Analyzing the Concurrent Validity (Distinctive Capability)

In the concurrent validity approach a measure is stated valid if it has an ability to distinguish groups that it should theoretically be able to distinguish between. A good measure should have a capability to distinguish well among the LGs evaluated (Kloha et al, 2005). The analysis of distinctive capability is developed based on the results of concurrent validity which show that there is a correlation between financial distress and FCI. Steps taken in the analysis were as follows:

1. Rank LGs based on FCI scores.
2. Group LGs into 3 groups. Group 1 consists of LGs which have FCI scores less than 1 standard deviation, group 2 consists of LGs which have FCI scores between -1 and 1, and group 3 consists of LGs which have FCI scores more than 1 standard deviation. This division is based on the area of normal distribution which has a bell-shaped curve. In the normal distribution curve, the area of plus and minus 1 standard deviation covers 67% of the population, the area of more than plus 1 standard deviation is 16% of the population, and the area of less than minus 1 standard deviation is also 16% of the population.
3. Analyze the mean difference of financial distress among the 3 groups using a One-Way ANOVA test. The results of the ANOVA test show that p-value is 0.000 which is less than 0.05. This statistic means that the 3 groups of LGs have a significant mean difference of financial distress. Furthermore, results from the Multiple Comparison show that the mean of financial distress of group 3 (good condition) is higher than that of group 2 (average condition), and the mean of financial distress of group 2 is higher than that of group 1 (poor condition). Based on these findings, it is concluded that the measure of financial condition developed in this study is distinctive.

8. Determining the Cut-Off of the Level of Financial Condition

The cut-off of the level of financial condition is determined based on the result of concurrent validity. This study differentiates the level of financial condition into 3 groups which are good financial condition, average financial condition, and poor financial condition. The grouping is based on the characteristic of normal distribution which has a bell curve. LGs are classified as "Good Financial Condition" if their FCI score is more than plus one (+1) standard deviation. If a LG has FCI score between plus one standard deviation and minus one standard deviation, so they will be grouped as "Average Financial Condition". Finally LGs which have FCI scores less than minus one standard deviation will be labeled as "Poor Financial Condition".

Based on the results of the ANOVA test in concurrent validity analysis in the previous section, which show that the FCI score can easily be

used to distinguish the level of financial distress among the groups of LGs, the cut-off scores of the FCI to differentiate the level of financial condition are determined.

How to determine the cut-off scores? First take a look at the FCI scores of LGs lying around the borders between groups of LGs which are the border between the group with a Good Financial Condition (i.e. z-FCI more than 1) and the group with an Average Financial Condition (i.e. z-FCI between -1 to 1); and the group with an Average Financial Condition and the group with a Poor Financial Condition (i.e. z-FCI less than -1). The Table 8 below shows the LGs' FCI scores and its z-score of FCI for LGs around the borders.

Table 8. FCI and Z score of FCI around Borders of Groups with Good, Average, and Poor Financial Condition

Rank	Name of District LG	FCI	Z-FCI
1	Kabupaten AAA	0.190797	-2.36387
…	Kabupaten …	…	…
39	Kabupaten BBB	0.32329	-1.00126
40	Kabupaten CCC	0.323707	-0.99697
…	…	…	…
247	Kabupaten DDD	0.51774	1
248	Kabupaten EEE	0.519136	1.01437
…	…	…	…
329	Kabupaten FFF	0.520528	1.02869

The cut-off point between group with Poor Financial Condition and group with Average Financial Condition is the FCI score of the LG which ranks the lowest in the group with Average. The LG of Kabupaten CCC has the lowest rank in the group of "Average Financial Condition" with a FCI score of 0.323707 which lies just above the -1 standard deviation. Therefore, the cut-off point between the group with Poor Financial Condition and the group with Average Financial Condition is a FCI score of 0.323707. As a result a LG with a FCI score below 0.323707 will grouped into the Poor Financial Condition group and a LG with FCI score of 0.323707 or above will be put into the Average Financial Condition group.

The same process was taken to determine the cut-off point between the group with Average Financial Condition and the group with Good Financial Condition. The cut-off point between these groups is the FCI score of the LG which ranked the highest in the group with Average Financial Condition. The LG of Kabupaten DDD has the highest rank in the group with Average Financial Condition with a FCI score of 0.51774 which lies exactly on the 1 standard deviation. Therefore, the cut-off point between these 2 groups is a FCI score of 0.51774. As a result, LGs with FCI score of 0.51774 or lower will be grouped into the Average Financial Condition group and those with a FCI score higher than 0.51774 will be put into the Good Financial Condition group. The following Table 9 shows the cut-off scores of financial condition.

Table 9. Cut-Off Scores of Financial Condition

Level of Financial Condition	FCI Score
Good Financial Condition	Higher than 0.51774
Average Financial Condition	Between 0.323707 and 0.51774
Poor Financial Condition	Less than 0.323707

DISCUSSION

This study has 3 main implications: theoretical implications; methodological implications; and practical implications. Those implications are discussed in the following sections.

1. Theoretical Implications

This study provides a conceptual framework that is more systematic in the development of measurement models of LG financial conditions because this study firstly conceptualizes the definition of the financial condition before determining the dimensions and indicators of it. This was not done in previous studies (see Groves et al.,1981, Berne and Schramm, 1986; Nollenberger at al., 2003, Brown, 1993, Wang et al.,2007; CICA, 1997; Kloha et al.,2005, Jones and Walker, 2007; Hendrick, 2004; Kamnikar et al., 2006). This study argues that in defining the LG financial condition it should be derived from the objectives of the nation because the financial condition is the result of a LG's effort to achieve

a nation's objectives. In part 2, this study conceptualizes the definition of the financial condition of LG.

This study also provides new dimensions and indicators to measure the FCI. Unlike the business sector which has seminal ratios to assess the financial condition of a company, this study offers new ratios to enrich tools in assessing the financial condition of LG.

2. Methodological Implications

Based on findings discussed in part 4, the model developed to measure the financial condition of LG is reliable and valid. In addition, the model developed meets the set criteria as well, so that it is a robust model. The model satisfies the following criteria.

1. Theoretically sound, which means that dimensions and indicators developed are derived from theories on the financial condition of LG (Kloha et al 2005; Wang et al 2007). To fulfill this criterion this study, first, conceptualizes the definition of the financial condition as a basis to determine dimensions and indicators of it. Part 2 discussed how to conceptualize the definition of the financial condition of LG. Based on the definition, the author develops dimensions and indicators to measure the financial condition. Compared to previous research (see Groves et al., 1981, Berne and Scramm, 1986; Nollenberger at al., 2003, Brown, 1993, Wang et al., 2007; CICA, 1997; Kloha et al., 2005a, Jones and Walker, 2007; Hendrick, 2004; Kamnikar et al., 2006,Casal and Gomez, 2011) which built arbitrary dimensions and indicators of financial condition, this study offers a more logical flow of dimensions and indicators forming the financial condition concept.

2. Possesses the qualities of measurement validity and reliability (Wang et al 2007, Cooper and Schindler, 2010). Part 4 analyzed the reliability and validity of the measure. The reliability and validity of the measure were tested systematically and comprehensively. Results of the analysis show that the measure possesses the qualities of reliability

and validity, either for the face, content, predictive, concurrent, and convergent validity.

3. Assesses the financial condition of the entire LG rather than only part of it (Wang et al 2007). This study used LG financial statements which were prepared based on Governmental Accounting Standards to measure the financial condition of the LGs. This circumstance fulfills the criterion.

4. Provides predictive ability, which means that information provided by the measure, can be used to recognize factors that are believed to associate with it. This criterion is fulfilled when this study analyses the relationship of the FCI and the socio-economic factors in part 4.

5. Distinguishes well among the LGs evaluated (Kloha et al, 2005). This criterion is met by developing the cut-off points to distinguish groups of LG. This study sets certain FCI scores to group LGs' financial condition into three groups (good, average, and poor)

6. Use of publicly available, uniform, and frequently collected data. As a result, the measure will be objective and resistant to manipulation and gaming (Kloha et al, 2005). As described in Part 4 the data used to develop the measure (i.e. the financial statements of LGs and socio-economic data) were sourced from the state's institutions, namely the Supreme Audit Board and the Central Bureau of Statistics. The data are periodically released to the public by the institutions. Therefore the data met the criteria of being publicly available, uniform, and frequently collected data.

7. Being practical, as Cooper and Schindler (2010) explain, is related to various factors of economy, convenience, and interpretability. This criterion is satisfied when a model is build based on publicly available, uniform, and frequently collected data. Using such data, LGs incur low costs (i.e. economy) to develop the measure because the data is publicly available. The criterion of convenience is satisfied as the data needed are periodically released by authorized organizations; and

interpretability criterion is fulfilled by its measure stated in an index of 0 to 1 so that it is easily understood by LG officials and the public.

Based on the discussion above, the authors believe that this study offers a new method to assess the financial condition of LG by proposing new dimensions and indicators and also methods in developing a composite index of LGs' financial condition, which will be an improvement on the existing methods.

3. Practical Implications

There are several practical implications of the FCI including benefits of the FCI, parties who should provide the FCI, and who can take benefit from the FCI. The following sections discuss the practical implications.

Benefits of the Financial Condition Index

The existence of a FCI will enhance LGs' public accountability. Previously, the one reference of the LGs' public financial accountability has been the opinion of the financial statements issued by the Supreme Audit Board. With the presence of the FCI, LGs' public accountability will be stronger because the FCI provides information for public financial accountability which is more substantive than the opinion of the financial statements issued by the Supreme Audit Board. .

As previously discussed in the Part 1, LGs in Indonesia, at the provincial, municipal, and district levels, must prepare financial statements consisting of balance sheets, statements of actual performance compared to budget, and statements of cash flows (Act 17/2003, Act 1/2004, Act 32/2004, and Government Regulation 58/2005). These financial statements must be audited by The Supreme Audit Board of The Republic of Indonesia in order to assure compliance with the Government Accounting Standards (Act 15/2004). These financial statements inform users about the value of total assets, total debt, net assets, total revenues, total expenditures, and cash inflows and outflows. However, these audited financial statements do not adequately inform users about the LG's financial conditions

or financial health. In other words, the opinion regarding the financial statements tends to look at the attributes of the financial statements rather than the substance of the financial condition. Therefore, this gap is bridged by the existence of the FCI.

The FCI can be used to rank the LGs' bonds. Government Regulation 30/2011 allows LGs in Indonesia to borrow money by issuing LG bonds through the capital markets. In this circumstance, the FCI can be used by credit rating agencies to assign quality ratings to LG bonds. In addition, the rating of the FCI can be used as one of the criteria that must be met by LGs before they issue bonds to the public.

The database used to compile the FCI, can build the "industry ratios" for equivalent LG groups. As discussed in the part 4, this "industry ratios" can be based on the mean or median of equivalent LGs. As is the case in the business sector, the "industry ratios" can be the benchmark for each LG to compare its financial condition to other equivalent LGs.

A further implication of the "industry ratios" as a benchmark is the emergence of competition among LGs. LG leaders will compete to be better than other LGs or at least to better their own financial condition from the previous period. The existence of an atmosphere of competition will make LG more efficient and effective in the delivery of services and products to the community. In turn, community well-being will be improved because the community can get better services and products from the LG.

Who Has Responsibility for Preparing the FCI?

LG prepares the FCI through the LG Inspectorate, the Regional Planning Office, and the Regional Financial Management Office because these 3 bodies have the data to analyze the FCI. Another reason is that the 3 agencies would be the primary users of the FCI information. The Inspectorate will use this information to oversee the financial management of the LG; the Regional Planning Office will use the FCI as an input in the planning of development, while the Regional Financial Management Office will

use the FCI as guidance in areas of financial management.

The Supreme Audit Board (the BPK) also has responsibility to prepare the FCI. After the BPK completes the audit of financial statements from LG, then the BPK can prepare the FCI based on the audited financial statements. First, the LGs are grouped according to their characteristics. The grouping can follow the grouping that has been developed by the police. Second, the BPK sets the LG ranking for each group.

Who Can Take Benefits from the Financial Condition Index?

Based on the practical implications discussed above, it can be concluded that the development of the FCI will contribute benefits to the stakeholders in LG. For the LG itself, assessing the its own financial condition is important because information resulting from the assessment would help it to detect any signs of fiscal distress and in turn to help to avert any fiscal crisis (Jung, 2009) and to improve service delivery (Ngwenya, 2010). In addition, LG can establish a formal early warning system for financial distress, and therefore LG will be in a strong position to detect and to minimize financial distress before it occurs (Kloha et al., 2005).

For the central government, the results of this study will be valuable, especially for the Ministry of Finance and the Ministry of Home Affairs, in monitoring the financial condition of LG and providing an input to these ministries into developing policies and regulations related to managing LG finance.

The legislative members of LG and the community can use the information about LG financial conditions to observe LG executives in managing LG finance. If the LG's score for this year's financial condition is better than last year or better than other LGs' scores, it means that the financial condition of the LG is improved, and vice versa. Thus, by using this information they can monitor and evaluate whether the executives are maintaining LG finance in a good condition, compared to other LGs. As a result, there will be competition among LG executives in managing LG finance.

CONCLUSION, LIMITATIONS, AND SUGGESTION FOR FURTHER STUDY

The study offers a new method to assess the financial condition of LG by proposing new dimensions and indicators and also methods for developing a composite index of financial condition, which will be an improvement on the existing methods. The results show that the measure developed is reliable and valid. In addition, results of this study will contribute benefits to LGs and their stakeholders: the community, the legislature, the central government, and potential investors.

The limitations of this study are that the study assumed that the weight of the dimensions forming the measure is equal. In reality, the weight may be different. Another limitation is the sample of this study is "only" taken from LGs in Java. Therefore it is suggested that future research determine the weight for each dimension and also widen the sample scope. In addition, future research should investigate why some LGs stayed consistently in the top 10 rank or the lowest rank.

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